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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/595,548

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William Roberts

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Saul Ewing LLP (Philadelphia)

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EXAMINER

TRUONG, LECHI

ART UNIT

PAPER NUMBER

2194

MAIL DATE

DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/595,548	Applicant(s) ROBERTS, WILLIAM	
	Examiner LECHI TRUONG	Art Unit 2194	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 October 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 4-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 4-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1, 4-10 are presented for the examination.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 4, 5, 8-10 rejected under 35 U.S.C. 103(a) as being unpatentable over Voellm (US 7100172 B2) in view of Stern (US 7047537 B1).

As to claim 1, Voellm teaches a link(linking , col 3, ln 50-55), a function in a dynamic link library(the DLL functions , col 3, ln 50-55), a computer device(remote server 210, col 3, ln 42-50), a link between an application program and a function in a dynamic link library of a computing device(col 3, ln 50-55), a remapping component(the additional dispatch table 404 is a copy [remapping]of the original dispatch table (314, see FIG. 3) generated by the loader 310[component], col 5, ln 35-37/loader 310, col 4, ln 63-67 to col 5, ln 1-3), providing a remapping component arranged to provide(col 5, ln 35-37 , col 4, ln 63-67), a call by the application (call , col 5, ln 5-8), the function at an address location in a first dynamic link library(the addresses of each routine of each loaded DLL (e.g., 306, col 4, ln 65-67), in response

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to a call by the application program to link to the function at an address location in a first dynamic link library(col 4, ln 66-67/ col 5, ln 5-10), an address location for the function(The dispatch table 314 includes entries (e.g., 316). Each entry includes the resolved addresses for each of the routines of the loaded DLLs. The resolved addresses in dispatch table 314 effectively operate as pointers; col 4, ln 55-65/Processing examines the pointer 308 of initial.dll to locate the dispatch table that lists the address of routine2. Pointer 308 directs processing to updated dispatch table 402, col 2, ln 44-57), a further dynamic linking library(dispatch table 314, col 4, ln 55-65/ the dispatch table 402, col 5, ln 44-57), an address location for the function in a further dynamic link library(col 4, ln 55-56/ col 5, ln 44-57), so as to enable the application programmed to link directly to the function in the further dynamic link library(processing examines the pointer 308 of initial.dll to locate routine2. Pointer 308 directs processing to updated dispatch table 402. Updated dispatch table 402 continues to effectively point to routine2 located in initial.dll 306. As a result, app.exe utilizes routine2 of initial.dll 306 to perform the function requested, col 6, ln 15-25), converting a call by the application program to link to the function at an address location in a first dynamic link library to an address location for the function in a further dynamic link library (The dispatch calls are effectively re-pointed to a new DLL other than the original DLL provided (e.g., 306) as illustrated in FIG. 4 below. The process for associating a new DLL with the application is further described in the discussion of FIG. 5 below, col 5, ln 9-15/ Updated dispatch table 402 includes new pointers to LWIO.dll 406 for routines corresponding to the LWIO functionality (e.g., routine1'). For example, app.exe 302 includes a reference to routine1. Processing examines the pointer 308 of initial.dll to find the dispatch table to locate routine1. Pointer 308 directs processing to updated dispatch table 402.

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However, at updated dispatch table 402, the address for routine1 has changed. The address for routine1 now points to routine1' located in LWIO.dll 406 rather than routine1 of initial.dll 306. As a result, app.exe utilizes routine1 to perform the function requested rather than routine1 of initial.dll 306, col 5, ln 55-67/ , the dispatch call is updated to point to the corresponding routine of the LWIO DLL. Accordingly, as the application is executed, col 7, ln 12-15).

Voellm does not explicitly teach using the relocation instruction to insert into the export data table the address location for the function in the further dynamic link library and a call by the application program to link to the function in the first dynamic link library jumps directly to the address location for the function in the further dynamic link library using the address location inserted into the export data table without the use of a sub-routine in the remapping component. However, Stern teaches the relocation instruction to insert into the export data table the address location for the function in the further dynamic link library and a call by the application program to link to the function in the first dynamic link library jumps directly to the address location for the function in the further dynamic link library using the address location inserted into the export data table without the use of a sub-routine in the remapping component(a branch table is provided in each parent DLL to enable each child DLL to subsequently be called. For instance, the third DLL 112 shown in FIG. 1 has the option of calling the fourth DLL 114 and the sixth DLL 118 depending upon which chain is being executed (i.e., which interface initiated execution). FIG. 2A is a diagram illustrating the inclusion of a branch table 202 in a parent DLL, the third DLL 112 of FIG. 1. Each parent DLL may be created to include a dummy address associated with each possible child DLL that may be executed. More particularly, as shown, in a first entry 204 of the branch table 202, if the child DLL to be executed is determined to be the

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fourth DLL (DLL4), a branch or jump instruction is provided with a dummy address, shown here to be "XXX." Similarly, in a second entry 206 of the branch table 202, if the child DLL to be executed is determined to be the sixth DLL (DLL6), a branch or jump instruction is provided with another dummy address, col 3, ln 65-67 to col 4, ln 1-15/ Upon loading of the DLLs, branch tables of the parent DLLs are updated as appropriate to replace dummy addresses with entry points of the appropriate child DLLs. FIG. 2B is a diagram illustrating the updating of the branch table provided in the parent DLL, the third DLL 112 of FIG. 1. As shown, the branch table 202 is updated to include an entry in the branch table 202 that identifies an entry point of one of the child DLLs. More particularly, the branch table 202 is updated such that the appropriate dummy address is replaced with an entry point of the corresponding child DLL. As shown in FIG. 2B in the first entry 204, when the child DLL to be called is the fourth DLL, DLL4, and the jump address is "1000." However, as shown in the second entry 206, when the child DLL to be called is the sixth DLL, DLL6, the jump address is "2000." Thus, when the parent DLL is shared by two or more executable chains of DLLs, each child DLL is associated with one of the executable chains. In other words, it is necessary to specify which entry in the branch table is to be executed next when more than one entry exists in the branch table. This may be accomplished, for example, by associating a particular parameter with each of the executable chains, col 4, ln 15-40/ Once the chain is built, the set of DLLs may be executed without requiring a main program (e.g., parent code module) responsible for calling each of the DLLs. Moreover, since the chain is built when the DLLs are loaded, the DLLs can be modified without requiring recompilation, col 5, ln 3-10).

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It would have been obvious to one of the ordinary skill in the art at the time the invention was made to modify the teaching of Voellm with Stern to incorporate the feature of the relocation instruction to insert into the export data table the address location for the function in the further dynamic link library because this allows the code modules need not be called by a main program, the time that is typically required to call each code module and return to the main program is eliminated.

As to claim 4, Voellm teaches the remapping component is arranged to provide the respective address locations of a plurality of functions in a plurality of further dynamic link libraries (col 4, ln 63-67 to col 5, ln 1-5).

As to claim 5, Voellm teaches providing a plurality of the remapping components between the first dynamic link library and the further dynamic link library (col 4, ln 63-67 to col 5, ln 1-5).

As to claims 8-9, they are apparatus claims of claim 1; therefore, they are rejected for the same reason as claim 1 above.

As to claim 10, Voellm teaches one or more of the further dynamic link libraries comprise a remapping component (col 5, ln 39-45).

3. Claims 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Voellm (US 7100172 B2) in view of Stern(US 7047537 B1) and further in view of Hammond (US 5974470 A).

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As to claim 6, Voellm does not teach the application program is arranged to link by ordinal number to the dynamic link library. However, Hammond teaches the application program is arranged to link by ordinal number to the dynamic link library(As noted by Windows expert Brian Livingston in the Sep. 2, 9 and 16, 1996 issues of InfoWorld, Microsoft and other vendors provide a number of shared DLLs with their applications, and different versions of these DLLs may have the same name . When a user installs a new application that also uses one of these DLLs the application may install a version of a DLL that is older or different than the one the other applications support. For example, Mr. Livingston states that the DLL called "OLE2NLS.DLL" is used by Microsoft Office 4.0, 4.2, 4.2c, 4.3, 4.3c, Microsoft Excell 5.0, 5.0c, Microsoft Word 6.0, 6.0a, 6.0c, Microsoft PowerPoint 4.0, 4.0c, Microsoft Project 4.0, and Microsoft Visual FoxPro 3.0 is Version 2.01, col 3, ln 9-20).

It would have been obvious to one of the ordinary skill in the art at the time the invention was made to modify the teaching of Voellm and Stern with Hammond to incorporate the feature of the application program is arranged to link by ordinal number to the dynamic link library because this provides multiple versions of the same-name DLL module, in order to enable several different applications to run at once.

As to claim 7, Hammond teaches the application program is arranged to link by name to the dynamic link library (col 3, ln 9-20).

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LeChi Truong whose telephone number is (571) 272-3767. The examiner can normally be reached on 8 - 5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sough Hyung can be reached on (571) 272-6799. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIP. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIP system, contact the Electronic Business Center (EBC) at 866-217-9197(toll-free).

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/LeChi Truong/

Primary Examiner, Art Unit 2194

LeChi Truong

February 22, 2010